

In the Claims:

Please amend claims 2-8,11-18 and 27. Please add new claims 31-38. The claims are as follows:

1. (Original) A method of fabricating a structure, comprising:

- (a) forming a trench in a substrate;
- (b) depositing a first layer of polysilicon on a surface of said substrate, said first layer of polysilicon filling said trench;
- (c) chemical-mechanical-polishing said first layer of polysilicon at a first temperature to expose said surface of said substrate;
- (d) removing an upper portion of said first layer of polysilicon from said trench;
- (e) depositing a second layer of polysilicon on said surface of said substrate, said second layer of polysilicon filling said trench; and
- (f) chemical-mechanical-polishing said second layer of polysilicon at a second temperature to expose said surface of said substrate, said second temperature different from said first temperature.

2. (Currently Amended) The method of claim [[1]] 9, wherein said first temperature is higher than said second temperature.

3. (Currently Amended) The method of claim [[1]] 9, wherein said first temperature is between about 100°F to about 140°F and said second temperature is between about 80°F to about 100°F.

4. (Currently Amended) The method of claim [[1]] 9, wherein said first temperature is about 120°F and said second temperature is about 90°F.

5. (Currently Amended) The method of claim [[1]] 9, wherein step (a) is followed by step (b), step (b) is followed by step (c), step (c) is followed by step (d), step (d) is followed by step (e) and step (e) is followed by step (f).

6. (Currently Amended) The method of claim [[1]] 9, wherein said first layer of polysilicon comprises N-doped polysilicon and said second layer of polysilicon comprises N-doped polysilicon.

7. (Currently Amended) The method of claim [[1]] 9,
wherein said substrate includes an uppermost polishing stop layer, a top surface of said
polishing stop layer being said surface of said substrate; and
step (a) including includes forming said trench through said polishing stop layer.

8. (Currently Amended) The method of claim [[1]] 9, further including, between steps (a) and (b), forming a dielectric layer on a sidewall of said trench.

9. (Currently Amended) The method of claim 1, A method of fabricating a structure, comprising:
(a) forming a trench in a substrate;
(b) depositing a first layer of polysilicon on a surface of said substrate, said first layer of
polysilicon filling said trench;

(c) chemical-mechanical-polishing said first layer of polysilicon at a first temperature to expose said surface of said substrate ~~step (c) further including:~~ by pressing a top surface of said first layer of polysilicon against a rotating first polishing pad while dispensing a first slurry on a top surface of said first polishing pad, said first polishing pad maintained at said first temperature; and

(d) removing an upper portion of said first layer of polysilicon from said trench;

(e) depositing a second layer of polysilicon on said surface of said substrate, said second layer of polysilicon filling said trench; and

(f) chemical-mechanical-polishing said second layer of polysilicon at a second temperature to expose said surface of said substrate, said second temperature different from said first temperature; ~~step (f) further including:~~ by pressing a top surface of said second layer of polysilicon against a rotating second polishing pad while dispensing a second slurry on a top surface of said second polishing pad, said second polishing pad maintained at said second temperature.

10. (Original) The method of claim 9, further including:

dispensing said first slurry at said first temperature; and

dispensing said second slurry at said first temperature.

11. (Currently Amended) A method of fabricating a structure, comprising:

(a) forming an array of trenches in a substrate;

(b) depositing a first layer of polysilicon on a surface of said substrate, said first layer of polysilicon filling said trenches;

(c) chemical-mechanical-polishing said first layer of polysilicon at a first temperature to expose said surface of said substrate, said first layer of polysilicon in said trenches dished into said trench a first distance from surface of said substrate by said chemical-mechanical-polishing of said first layer of polysilicon;

(d) removing an upper portion of said first polysilicon from each of said trenches;

(e) depositing a second layer of polysilicon on said surface of said substrate, said second layer of polysilicon filling said trenches; and

(f) chemical-mechanical-polishing said second layer of polysilicon at a second temperature to expose said surface of said substrate, said second temperature different from said first temperature, said second layer of polysilicon in said trenches dished into said trench a second distance from surface of said substrate by said chemical-mechanical-polishing of said second layer of polysilicon, said first distance greater than said second distance.

12. (Currently Amended) The method of claim [[11]] 19, wherein said first temperature is higher than said second temperature.

13. (Currently Amended) The method of claim [[11]] 19, wherein said first temperature is between about 100°F to about 140°F and said second temperature is between about 80°F to about 100°F.

14. (Currently Amended) The method of claim [[11]] 19, wherein said first temperature is about 120°F and said second temperature is about 90°F.

15. (Currently Amended) The method of claim [[11]] 19, wherein step (a) is followed by step (b), step (b) is followed by step (c), step (c) is followed by step (d), step (d) is followed by step (e) and step (e) is followed by step (f).

16. (Currently Amended) The method of claim [[11]] 19, wherein said first layer of polysilicon comprises N-doped polysilicon and said second layer of polysilicon comprises N-doped polysilicon.

17. (Currently Amended) The method of claim [[11]] 19,
wherein said substrate includes an uppermost polishing stop layer, a top surface of said
polishing stop layer being said surface of said substrate; and
step (a) including includes forming said trench through said polishing stop layer.

18. (Currently Amended) The method of claim [[1]] 19, further including, between steps (a) and (b), forming a dielectric layer on sidewalls of said trenches.

19. (Currently Amended) The method of claim 11; A method of fabricating a structure,
comprising:

- (a) forming an array of trenches in a substrate;
- (b) depositing a first layer of polysilicon on a surface of said substrate, said first layer of polysilicon filling said trenches;
- (c) chemical-mechanical-polishing said first layer of polysilicon at a first temperature to expose said surface of said substrate, said first layer of polysilicon in said trenches dished into

said trench a first distance from surface of said substrate step (c) further including: by pressing a top surface of said first layer of polysilicon against a rotating first polishing pad while dispensing a first slurry on a top surface of said first polishing pad, said first polishing pad maintained at said first temperature; and

(d) removing an upper portion of said first polysilicon from each of said trenches;

(e) depositing a second layer of polysilicon on said surface of said substrate, said second layer of polysilicon filling said trenches; and

(f) chemical-mechanical-polishing said second layer of polysilicon at a second temperature to expose said surface of said substrate, said second temperature different from said first temperature, said second layer of polysilicon in said trenches dished into said trench a second distance from surface of said substrate, said first distance greater than said second distance step (f) further including: by pressing a top surface of said second layer of polysilicon against a rotating second polishing pad while dispensing a second slurry on a top surface of said second polishing pad, said second polishing pad maintained at said second temperature.

20. (Original) The method of claim 19, further including:

dispensing said first slurry at said first temperature; and

dispensing said second slurry at said first temperature.

21. (Original) A method of fabricating memory cell, comprising:

(a) forming a trench in a substrate and forming a dielectric layer on a sidewall of said trench;

- (b) depositing a first layer of polysilicon on a surface of said substrate, said first layer of polysilicon filling said trench;
- (c) chemical-mechanical-polishing said first layer of polysilicon at a first temperature to expose said surface of said substrate;
- (d) removing an upper portion of said first polysilicon from said trench;
- (e) depositing a second layer of polysilicon on said surface of said substrate, said second layer of polysilicon filling said trench;
- (f) chemical-mechanical-polishing said second layer of polysilicon at a second temperature to expose said surface of said substrate, said second temperature different from said first temperature;
- (g) removing an upper portion of said second layer of polysilicon from said trench and refilling said trench with an insulator; and
- (h) forming a NFET in said substrate and adjacent to said trench, a source of said NFET in physical and electrical contact with said second layer of polysilicon in said trench.

22. (Original) The method of claim 21, wherein said first temperature is higher than said second temperature.

23. (Original) The method of claim 21, wherein said first temperature is between about 100°F to about 140°F and said second temperature is between about 80°F to about 100°F.

24. (Original) The method of claim 1, wherein said first temperature is about 120°F and said second temperature is about 90°F.

25. (Original) The method of claim 21, wherein step (a) is followed by step (b), step (b) is followed by step (c), step (c) is followed by step (d), step (d) is followed by step (e) and step (e) is followed by step (f).

26. (Original) The method of claim 21, wherein said first layer of polysilicon comprises N-doped polysilicon and said second layer of polysilicon comprises N-doped polysilicon.

27. (Currently Amended) The method of claim 21,

wherein said substrate includes an uppermost polishing stop layer, a top surface of said polishing stop layer being said surface of said substrate; and
step (a) including includes forming said trench through said polishing stop layer.

28. (Original) The method of claim 21, further including, forming a heavily doped N+ region in said substrate adjacent to a lower portion of said dielectric layer on said sidewall of said trench.

29. (Original) The method of claim 21,

step (c) further including: pressing a top surface of said first layer of polysilicon against a rotating first polishing pad while dispensing a first slurry on a top surface of said first polishing pad, said first polishing pad maintained at said first temperature; and

step (f) further including: pressing a top surface of said second layer of polysilicon against a rotating second polishing pad while dispensing a second slurry on a top surface of said second polishing pad, said second polishing pad maintained at said second temperature.

30. (Original) The method of claim 29, further including:

dispensing said first slurry at said first temperature; and

dispensing said second slurry at said second temperature.

31. (New) The method of claim 1, wherein said first temperature is higher than said second temperature.

32. (New) The method of claim 31, wherein step (c) includes dispensing a first slurry at said first temperature onto a first polishing pad at said first temperature and step (f) includes dispensing a second slurry at said second temperature onto a second polishing pad at said second temperature.

33. (New) The method of claim 1 wherein said first temperature is between about 100°F to about 140°F and said second temperature is between about 80°F to about 100°F.

34. (New) The method of claim 1,

wherein said substrate includes an uppermost polishing stop layer, a top surface of said polishing stop layer being said surface of said substrate; and
step (a) includes forming said trench through said polishing stop layer.

35. (New) The method of claim 11, wherein said first temperature is higher than said second temperature.

36. (New) The method of claim 35, wherein step (c) includes dispensing a first slurry at said first temperature onto a first polishing pad at said first temperature and step (f) includes dispensing a second slurry at said second temperature onto a second polishing pad at said second temperature.

37. (New) The method of claim 11, wherein said first temperature is between about 100°F to about 140°F and said second temperature is between about 80°F to about 100°F.

38. (New) The method of claim 11,

wherein said substrate includes an uppermost polishing stop layer, a top surface of said polishing stop layer being said surface of said substrate; and
step (a) includes forming said trench through said polishing stop layer.